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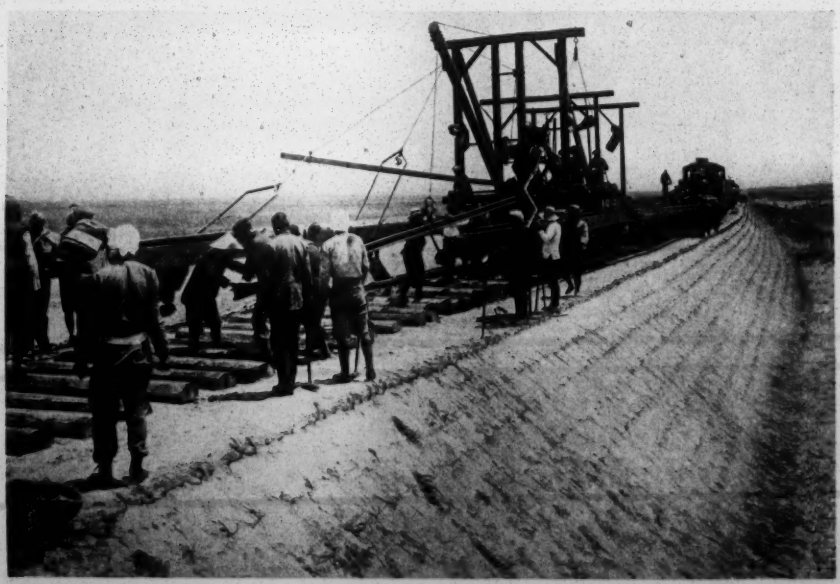

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MANCHURIA NOW LEADS THE WORLD IN RAILROAD BUILDING

While all of China proper has laid 5,200 miles of lines since 1877, Manchuria has constructed 3,700 miles since 1896—and still the work goes on, in some places at the rate of a mile a day! To prevent erosion, tufts of grass have been planted along this embankment (See Bulletin No. 1).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Tsitsihar, Walled Capital of Manchuria's Largest Province

TSITSIHAR, recently captured by Japanese forces in Manchuria, is the capital of Heilungkiang, largest of the three provinces of Manchuria, and the principal city in a vast, only partially-developed area of rich farming and grazing land.

Military activity is no new sensation to the 35,000 inhabitants of this brown-walled city in the fertile valley of the Nonni River. Tsitsihar was built in 1692 to overawe marauding tribes of Mongols and Cossacks.

China Formerly Sent Bandits There

Later China sent many bandits into exile into Manchuria. The medley of native population groups in the vicinity of Tsitsihar forced the construction of huge barracks there and the detail of military units to the town, so that it has long had the aspect of a fortress.

Like every other important Manchurian city Tsitsihar owes its present wealth and activity to railroads. When the Chinese Eastern Railway was built as a short cut between Chita and Vladivostok, Tsitsihar was a slovenly settlement of ramshackle buildings back of its crenelated walls. Builders of the Chinese Eastern missed the town by laying the line 18 miles to the south. Later, however, a narrow-gauge spur was built, connecting with the Chinese Eastern at a stop known only as Tsitsihar Station.

New and Busy Railroad

Tsitsihar has come into the present "misunderstanding," however, through a new and extremely busy railroad line, constructed during the last decade northward from Taonanfu, through Anganki (Anganchi), and crossing over the Chinese Eastern main line on a bridge near Tsitsihar Station, the junction point of the narrow-gauge line. This new line is Chinese-operated and Japanese-owned from Taonanfu to Anganki, and entirely Chinese-owned and operated from Anganki to the city of Tsitsihar.

The new line does not end at Tsitsihar but continues in a northeast direction for 79 miles to Taianchen. Eventually it will reach the Siberian border and will connect with a branch of the Trans-Siberian Railway at Blagoveshchensk.

Few travelers visited isolated Tsitsihar before the railroad came. For a time those who did passed by coffins strewn outside the town walls—coffins of natives whose families were unable to pay burial expenses. Inside the walls the travelers saw a dingy panorama of dirty shacks lining unpaved and unlighted streets.

Its Cosmopolitan Streets

Railroads have changed all that. To-day Tsitsihar is a busy town, greatly changed and improved by modern development. While it is neither as large nor as modernized as the other two Manchurian provincial capitals, Mukden and Kirin, Tsitsihar has several wide, paved streets, electric lights, telegraph and telephone services. Tile-roofed houses, with coats of bright paint, are rising where old shacks once stood.

Since the new north-south railroad has been added to the spur from the Chinese Eastern Railway, Tsitsihar is on the way to becoming one of the chief industrial centers of Manchuria. Mills are grinding out meal as fast as soy beans can be brought from Manchurian fields. Its shops and stores are thronged with customers, and its railroad yards are scenes of constant movements of trains. The new line to Taianchen broke all records for traffic in Manchuria this year.

© Photograph by O. Achtschin

COFFEE, THE "GREEN GOLD" OF BRAZIL, IN A SANTOS WAREHOUSE

After the coffee is packed in bags weighing 132 pounds each, it is loaded on ships by means of belt conveyors. Eight or ten thousand sacks can be shot into ships in an hour, depending on the ability of the stevedores in the hold to stow the cargo (See Bulletin No. 2).

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Coffee Once Used Only as Medicine

COFFEE, which America imports at the rate of 15 pounds yearly for every man, woman and child in the country, is our leading beverage, but once it was used only as a medicine. Coffee was discovered in Ethiopia (Abyssinia) over a thousand years ago, but for 200 years it was known solely as a stimulant.

This year Brazil, greatest producer of the bean, has such a surplus of coffee that a proposal to use the inferior grades of coffee—pressed into bricks—as locomotive fuel is being seriously considered.

It Has Built Fortunes and Cities

While coffee is a prolific stepchild of Brazil, having been imported from Ethiopia via Arabia, Europe, and the West Indies, its beans have by no means been given the proverbial treatment of a stepchild. Coffee has built up enormous Brazilian fortunes, cities, towns and railroads.

Tradition has it that the stimulating effect of coffee was discovered by an Ethiopian priest when he investigated the plants consumed by his herd of goats because the animals refused to take their proper rest. His tests led to the cultivation of the coffee plant, first for medicine and later as a beverage.

Shortly after its discovery, coffee "jumped" the Red Sea and began sprouting along the southern coast of Arabia, home of the famous Mocha coffee. In the fifteenth century, the aroma of coffee rose from European coffee pots, and when colonization got under way in the West Indies and South America, coffee beans were among some of the early cargoes from Europe.

There are about eighty species of coffee but only a few are cultivated for commerce. The cinchona tree, from the bark of which quinine is produced, is one of coffee's botanic relatives. So is gambier, which furnishes tanning material and dyes that bear the same name.

Moslems Banned Use of Coffee

In its rapid rise coffee has had its ups and downs. Its first use was in the form of a paste which was eaten. Moslems, prohibited from drinking wine, took to coffee. Moslem leaders, upon learning coffee's stimulating effect, called a meeting at Mecca and banned its use in 1511. Fanatics burned the coffee warehouses, raided the coffee houses and beat the shop proprietors with their brewing utensils.

The ban lasted only thirteen years in Egypt, where Sultan Selim denounced it, and further impressed his feeling upon his subjects by executing two Persian doctors who warned against coffee drinking. Egypt now is among the world's leading coffee consumers. Some Egyptian peoples even use the beverage in connection with religious rites.

Australia's "Sugar Bowl" and "Coffee Can"

A "coffee map" would show that nearly all coffee is grown between the Tropics of Cancer and Capricorn. All Central America, and a wide coastal rim around the northwest shoulder of South America, including Ecuador, Bolivia and Peru on the Pacific, and Colombia, the Guianas on the Atlantic and southern Mexico are large producing areas. Plantations also dot Jamaica, Haiti, Porto Rico and Santo Domingo.

Liberia, Sierra Leone, portions of southern Nigeria and the coastal zones of the Belgian Congo, Angola, Mozambique, Kenya, Ethiopia and Madagascar are

Manchus, Mongols, Koreans, Russians, Yakuts, Chinese, Japanese and a few Europeans may be seen on the streets of the city, which is fast assuming the cosmopolitan air of other Chinese trading towns. During the horse and cattle fairs Mongol cattle traders flock to Tsitsihar, nearly doubling the population.

Manchurian horses come mostly from the grass-covered plains west of Tsitsihar. The region is the native home of the pony which helped to build up the near-World Empire of the great Kublai Khan. Shaggy and stubborn, the Tsitsihar mount has endurance and is dependable on long marches over cold, irregular terrain. Heilungkiang province leads in the production of barley in Manchuria, is second in soy beans and wheat. Of its 20,500,000 cultivable acres only a third have so far been put into use.

Note: See also "Manchuria, Promised Land of Asia," *National Geographic Magazine*, October, 1929. For supplementary reading consult "Sungari River, Busy Manchurian Trade Route," in the GEOGRAPHIC NEWS BULLETINS week of November 2, 1931; and "Manchuria Transformed by Railways," week of October 12, 1931.

Bulletin No. 1, December 7, 1931.

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MANCHURIA IS ALMOST AS LARGE AS TWO GERMANYS

Two large mountain ranges, with fertile valleys between them, traverse the land of the ancient Manchus from north to south. The map, which indicates only the main trunk-lines of Manchuria's 3,700 miles of railroad, shows graphically the relation of Japan and Chosen (Korea) to "The Promised Land of Asia." Manchuria lies practically within the same degrees of latitude as Spain, France and England, but its winters are extremely cold and summers short and hot. Tsitsihar Station, not indicated on this map, lies 2 miles northwest of Anganki.

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Little Red Schoolhouse for Attu, America's Farthest West

ATTU, America's very far west, will have a schoolhouse next year. An appropriation from the Office of Indian Affairs, Department of Interior, has provided for a building and an American teacher in this remote outpost of the United States, at the extreme western end of the Aleutian Island chain, Alaska. All the pupils will be native Aleuts.

A communication to the Washington, D. C., headquarters of the National Geographic Society, from Mrs. G. R. Gardner, wife of the superintendent of schools of the Southwestern District of Alaska, describes the Aleuts, one of the most unusual and least known of the many wards of Uncle Sam.

No Longer a Dying Race

"The Aleuts, or natives of the Aleutian Island chain, are neither Indians nor Eskimos," Mrs. Gardner writes, "and consequently they should be considered as a third branch of the Alaskan family of native peoples. Contrary to prevailing opinion, the Aleuts to-day are not a dying race. Although they do not exist in the numbers they did when Russia discovered the islands, the alarming decreases in native population of the nineteenth and the early part of the twentieth centuries have been stopped, and the Aleuts in recent years are slowly increasing in numbers and general well-being. Recent figures from the Census Bureau show that the native population throughout Alaska increased 12.9 per cent during the past decade.

"The early Russian fur traders who came over from the Siberian mainland in the middle of the eighteenth century found some 25,000 Aleuts on the islands and the peninsula region of Alaska. They were industrious people, and good fighters until they were cowed by the cruelties of the Russians. Depletion of their seal herds, the main source of food and clothing, and the introduction of white men's diseases—even chicken pox and measles killed them off by the hundreds—soon reduced their numbers to a few thousands.

"In 1920 only 1,080 survived in the Aleutian Islands. But the number has increased to 1,116 in recent years due to improvements in living conditions and the spread of education to remote islands and villages. The population of the Bristol Bay district grew from 966 to 1,286 between 1920 and 1930.

"The Aleut to-day is racially an extremely mixed type. In appearance he resembles somewhat the Eskimo, and his speech is distantly related to the tongues of tribes to the north. Intermarriage with Russians, however, has given Aleuts many of the finer features of the white races. Under Russian rule they became Orthodox Christians, and to-day they are devout members of the Greek Catholic Church.

Neat Frame Houses, Painted White

"When the United States took over the Aleutian Islands with the rest of Alaska in 1867 the Aleuts lived in miserable sod huts dug in the ground. Driftwood timber and whalebone held up the roof and the single room was entered by a tunnel and ladder. Gradually these huts have been replaced by neat frame houses, painted white, which resemble those of New England and Nova Scotia fishing villages. Supply warehouses, schools and churches are scattered throughout the Aleutian chain, and up the peninsula to the Bristol Bay district, which is the extreme northern and eastern limits of the Aleut people.

"Some thirty American girls are bringing the benefits of modern education to the children of the present-day Aleuts. The school district is scattered over some 2,500 miles of territory, which makes it one of the largest under the American flag. Each winter the superintendent must make a 1,000-mile dog-sled journey along the Alaskan Peninsula, visiting schools. Many of the remote islands, such as Attu, cannot be visited in the winter time at all, and all contact work must be in the spring or fall by boat.

Aleuts Like Our Comics

"It is a lonely life for many of the American school teachers. On some of the islands their only neighbors are the native Aleut fishermen, fox trappers and their families. No dances or movies brighten the social life of the villages, although radio programs from the United States can be obtained when atmospheric conditions are suitable. Many of the American teachers say they like the isolation of their posts. A few find time for writing during spare hours; one teacher has already two books to her credit.

"The Aleuts show a keen interest in everything connected with education. The native women have long been famous as basket weavers, and their sons and daughters are apt pupils

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the African coffee regions, while the Arabian Peninsula, the southern tip of India and Ceylon are the coffee regions of Asia. Queensland, Australia's "sugar bowl," is also its "coffee can," while coffee berries brought from Liberia to Java have made this East Indian island's name a synonym for good coffee. Java's neighboring islands also are developing the coffee industry.

The world's leading coffee-producing region is a pear-shaped district on the Atlantic coast of Brazil in the "backyard" of Rio de Janeiro. The prosperity of São Paulo state rises and falls with the rise and fall of the coffee industry. Coffee built its fine modern capital, which bears the name of the state, its excellent railroad system and its good roads.

The railroad leading from São Paulo, the so-called coffee capital of the world, to Santos (see illustration, page 2), the world's largest coffee port, is one of the richest steel highways in the world because it is literally a coffee funnel with the small end of the funnel set in ships' holds at Santos.

Note: Ethiopia, the home of coffee, and the colorful coronation of its new King are described and illustrated in "Modern Ethiopia" and "Coronation Days in Addis Ababa," *National Geographic Magazine*, June, 1931; and "Nature and Man in Ethiopia," August, 1928. For up-to-date references and pictures of Brazil see "Skypaths through Latin America," January, 1931; and "Gigantic Brazil and Its Glittering Capital," December, 1930. See also "Sailing Forbidden Coasts," September, 1931, and "Java, Queen of the East Indies," September, 1929.

Bulletin No. 2, December 7, 1931.

© *Photograph by Addison E. Southard*

COFFEE TREES GROWING IN ETHIOPIA, HOME OF COFFEE

Arab travelers originally found coffee in the province of Kafa, Ethiopia, and took some back to Arabia. From there it recrossed the Red Sea to Harar, to-day the center of production of cultivated coffee in Ethiopia. Brazil, however, is by far the world's largest producer of coffee.

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Rio de Oro, Despite Its Name, Has Neither River nor Gold

THE World War ended for most of the world when the Armistice was signed on November 11, 1918. But down in Rio de Oro, Spain's desolate patch of west Africa, a German officer on a secret mission still leads desert tribesmen against the French in Morocco and Mauritania. Lieutenant Erich von Satzen has seen only two white men in the fifteen years since he was landed from the German submarine UC-20 and was told to send the "Blue" tribes against lonely outposts of the Legion. Awaiting orders to the contrary, he says, he will continue his share of the "hostilities."

Westernmost Part of Sahara Desert

Little-known Rio de Oro, where Lieutenant von Satzen carries on his one-man war, stretches four hundred miles along the sandy northwestern coast of Africa between Capes Bojador and Blanco. It lies southwest of Morocco and is the westernmost part of the Sahara Desert. Despite its name, which means "River of Gold," neither rivers nor gold exist in this wasteland, one of the least-known parts of the earth.

The misnomer, "River of Gold," was received from Portuguese discoverers in 1442. The Portuguese mistook a long indentation on the coast for the estuary of a river, and, obtaining some gold dust from the natives, immediately called it "Rio d'Ouro," or "River of Gold." They believed they had found the mythical "Pactolus," supposed to be a branch of the Nile River in that part of the continent.

After its "discovery" old maps traced a river on a straight line from Rio de Oro across the Sahara to its confluence with the Nile, somewhere in Nubia. Thus a river was made to flow where no river existed. The Portuguese "Rio d'Ouro" was changed to Rio de Oro when the Spanish took possession of the territory in 1885.

Most of Rio de Oro is a sterile and rocky plateau about 1,000 feet high. Near the coast is grown esparto grass, of which paper, cordage and baskets are made. Further inland are oases. Nomad Berbers and negroes eke a sparse living by raising cattle, sheep and camels. Its climate is dry but not unhealthful, although summer days in Rio de Oro not infrequently reach 120 degrees. Little known and little visited, it is still a land of mystery to the casual student of geography.

Fisheries of Commercial Importance

The only Spanish colony in the territory is at Villa Cisneros. Here are the headquarters of the fishing industry, Rio de Oro's sole claim to commercial importance. Off its coast are found aslimsah, which weigh from 30 to 80 pounds each, tunny and other large and valuable fish. Cod are found in great numbers although they do not compare in size and flavor with the cod of Newfoundland and the North Sea.

The fisheries are largely in the hands of Spanish and French fishermen from the Canary Islands, which lie northwest of Rio de Oro. Under these capable fishermen, the industry has progressed until it now forms a source of revenue for the Spanish Government.

Note: See also "By Seaplane to Six Continents," *National Geographic Magazine*, September, 1928. Neighboring Morocco is depicted in "Across French and Spanish Morocco," March, 1925. For supplementary reading consult "Sindbads of Science," July, 1927.

in simple vocational work. They take a keen interest in writing and drawing. Colored pictures—especially American comics—keep them occupied for hours.

"In the more advanced schools a new generation of Aleut substitute teachers is in training, and soon American-educated Aleuts will be able to take over the education of their people. At Kanakanak, on the Alaska mainland, the orphans of 300 adults, who died during the world-wide influenza epidemic of 1918, are being educated in the largest industrial school in Alaska. The Aleuts are good-natured as a rule, and extremely fond of American sports.

Boys Interested In Airplanes

"Since the visit of the American round-the-world flyers in 1924, the boys have shown an interest in aviation, and have been disappointed that most of the recent flights have been across the northern part of the Bering Sea.

"Unalaska, the commercial and governmental center of the southwestern district of Alaska, is a busy, wide-awake community with a land-locked port—known to seamen as Dutch Harbor—and considerable social life. Here the winters are not much colder than those of Kentucky or Tennessee, despite the fact that Unalaska Island is as far north as Labrador. Snow-white revenue cutters and other boats patrolling the sealing grounds put in for supplies, as do the boats trading with the islands of the Aleutian chain. The Aleuts are still permitted to hunt seals at sea if they use only native equipment. Most of the income of the native population to-day, however, is derived from trapping the blue fox, whaling, and fishing for cod and halibut."

Note: For supplementary reading about the peninsular Aleuts see "A World inside a Mountain," *National Geographic Magazine*, September, 1931; "Mapping the Home of the Great Brown Bear," January, 1929; and "Sailing the Seven Seas in the Interest of Science," December, 1922. See also "The Valley of Ten Thousand Smokes," by Robert F. Griggs, published by the National Geographic Society. A list of The Society's natural science books, geographic pictures, and maps will be sent free to teachers upon application.

Bulletin No. 3, December 7, 1931.

© *Bernard R. Hubbard*

ALEXI, CHIEF OF THE CHIGNIK ALEUTS, AND TWO OF HIS SONS

The Chignik Aleuts live on the mainland of Alaska—the peninsula region which reaches down to the Aleutian Island chain. On the rack behind Chief Alexi and his children a part of their winter supply of salmon is drying.

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Greenwich: The World's Zero Milepost

GREENWICH OBSERVATORY, England, most widely known of the world's stations for observing the stars and marking out time, is to have a large new telescope that will put it more nearly on a par with less famous but more efficient competitors, according to news dispatches from London.

Greenwich is an unpretentious borough patch of London, but it has world importance in spite of its size. On practically every map and globe published longitude lines conspire to bring into prominence this community on the south bank of the Thames, 2½ miles below London Bridge. Nearly every country in the world and practically every ship that sails the seas describes its position as so many degrees east or west of Greenwich; for through the center of the dome of Greenwich Observatory runs the world's generally accepted zero meridian.

Associated with British Navy and Royalty

Fronting the deep waters of the lower Thames, Greenwich has always had a nautical flavor. As early as 1011 an invading Danish fleet made its base at Grenevic, as the place was then called. Through the centuries it has become more and more associated with British naval affairs. The town's outstanding building is the great Naval Hospital designed by Sir Christopher Wren, and considered one of the finest creations of that famous architect. It is no longer used as a hospital, but serves now as the Royal Naval College where Britain's naval officers are trained. Behind the College lies the Royal Naval School where youths are trained as sailors and marines to man the naval vessels. Behind the School stretches Greenwich Park, on the highest eminence of which, Flamsteed Hill, stands the famous observatory.

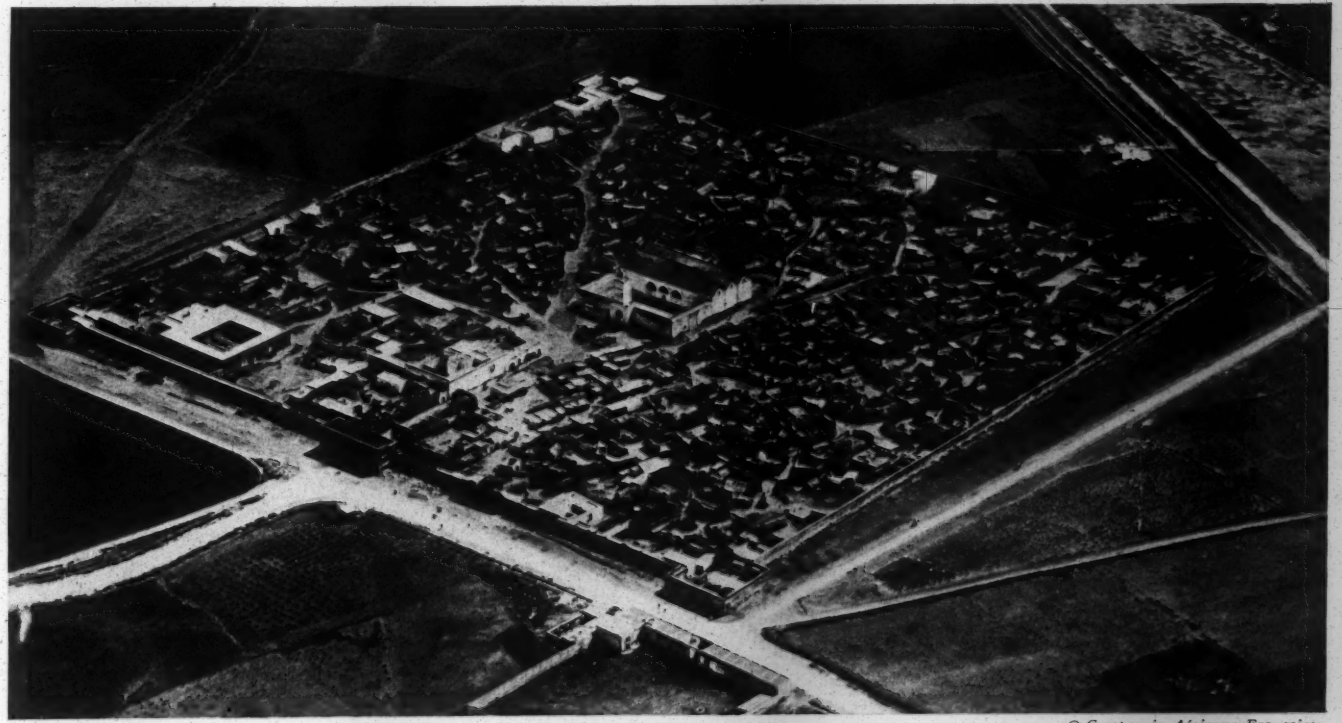
Greenwich was once even more famous than Westminster and Windsor are to-day as the home of British royalty. On parts of the sites of the Naval College and School was situated "Placentia," the favorite palace of British kings during the latter part of the fifteenth century, the sixteenth, and half of the seventeenth. In this palace Henry VIII was born and there he lived in succession with several of his wives. Elizabeth, too, was born in Placentia and spent much of her time there after she became queen.

After the execution of Charles I, the palace fell into decay. Charles II pulled down the ruins and started the erection of a new Placentia. But Greenwich was never again to harbor a Royal Palace. King William in 1696 had the uncompleted structure changed into the Naval Hospital as a memorial to his dead wife, Queen Mary.

An Observatory without Instruments

The Greenwich Observatory was established in 1675 under Charles II and placed in the old palace grounds, now Greenwich Park. He appointed John Flamsteed Astronomer Royal and placed him in charge of the observatory, but the state provided no instruments. Flamsteed, a clergyman-scientist, had to enlist the aid of personal friends to equip the station. By the time of his death in 1719 Greenwich had become one of the world's leading astronomical observatories.

Greenwich Observatory now combines some of the functions of the American Naval Observatory, Bureau of Standards, and Weather Bureau. It is responsible for the correction of British time. Each day at one o'clock p. m. the time ball falls



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FEDALA, A FRENCH-MOROCCAN OUTPOST NEAR DESOLATE RIO DE ORO

Against such walled coast towns a German officer still commands desert tribes of Spain's neighboring bit of the Sahara Desert. Like most Moorish villages of the Middle Ages Fedala, now almost abandoned, was the haunt of robber bands. No one knows who built it or when. Some think it the Dyos of the early geographer Ptolemy.

from a staff on the observatory, and electric signals are sent out by telegraph and wireless. On other staffs are wind gauges and direction indicators. In a near-by building are the British standards of length. As an additional duty, the observatory is responsible for keeping the Navy's chronometers and watches in repair.

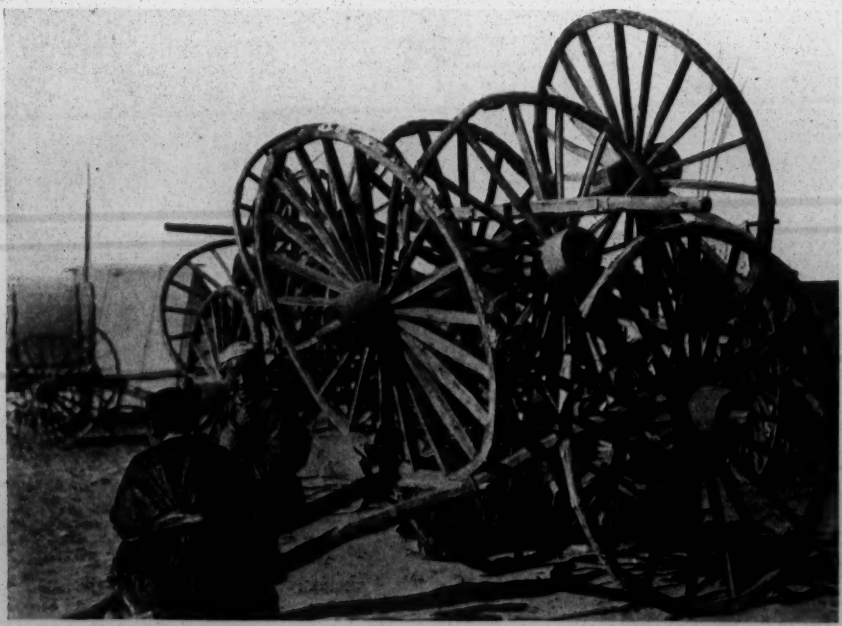
Rhodes and Paris Had Zero Meridians

Greenwich has been the world's official marking point for the zero meridian of longitude only since 1884 as a result of the Washington Meridian Conference. Since longitude was invented numerous zero meridians have been in use, usually for relatively small areas. In the days of Ptolemy the geographer, in the second century A. D., longitude was reckoned from Rhodes, logically enough, for that island of the eastern Mediterranean had been the commercial and maritime center of the world for centuries.

Paris and other capital cities marked the zero meridian for their own countries for a long time; but slowly the use of Greenwich spread, and has now become practically world-wide.

Note: See also "Highlights of London Town," *National Geographic Magazine*, May, 1929; and "London from a Bus Top," May, 1926.

Bulletin No. 5, December 7, 1931.



© *Photograph by Leonid Dalevitch*

"WHEELS FOR SALE" AT A MANCHURIAN FAIR

Next to cattle-raising, the Mongol's chief business is the transport of goods. For this he uses not only camels, but 300,000 or more two-wheeled carts. But he is no wheelwright; he must buy from Chinese workmen. These rude wheels have no iron tires, but merely flat pieces of metal spiked on where rim pieces join (See Bulletin No. 1).